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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,704	03/09/2004	Toru Takayama	10873.1414US01	2943

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EXAMINER	
FLORES RUIZ, DELMA R	
ART UNIT	**PAPER NUMBER**
2828	

MAIL DATE	DELIVERY MODE
01/25/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/796,704	TAKAYAMA, TORU	
	Examiner	Art Unit	
	Delma R. Flores Ruiz	2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 December 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *16-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *16-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 16 – 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimoyama Kenji (JP 2000-312052).

Regarding claim 16, Shimoyama shown in Figures 1 – 3, discloses a semiconductor laser device formed on a tilted substrate (see Fig. 1A Character 101) composed of a compound semiconductor, comprising an active layer (see Fig. 1A Character 106) and two cladding layers (see Fig. 1A and 1B Characters 102 and 111) interposing the active layer therebetween, wherein one of the cladding layers (see Fig. 1B, Character 111, and Paragraph [0048-0049]) forms a mesa-shaped (see Fig. 1B, Character 110, Paragraphs [0013, 0026-0027 and 0055-0056], the reference call "stripe-like opening") the ridge includes a first region (see Fig. 3a, Character W_C) where a width of a bottom portion of the ridge is substantially constant, and a second region

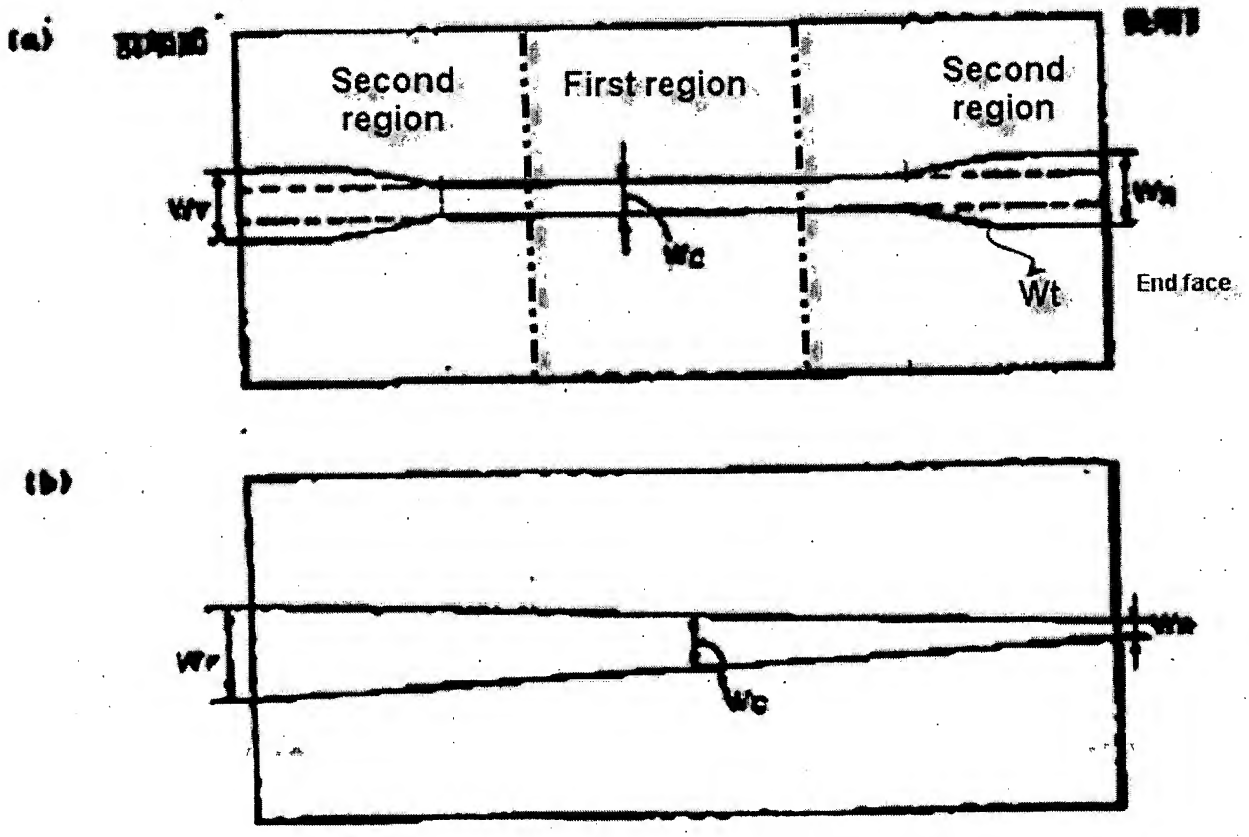
(See Fig. 3a, Characters Wt) where the width of the bottom portion of the ridge is varied continuously, and the second region (see Fig. 3a, Characters Wt) is placed between the first region (see Fig. 3a, Character W_C) and an end face (see Fig. 3a, Character W_R) in an optical path, and end face in an optical path.

Shimoyama discloses the claimed invention except for length of the first region is 10% to 50% with respect to a resonator length. It would have been obvious to one having ordinary skill in the art at the time the invention was made to resonator length with the first region %, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller,* 105 USPQ 233.

In addition, the selection of a region with respect to a resonator length, it's obvious because it is a matter of determining optimum process conditions by routine experimentation with a limited number of species of result effective variables. These claims are prima facie obvious without showing that the claimed ranges achieve unexpected results relative to the prior art range. In re Woodruff, 16 USPQ2d 1935, 1937 (Fed. Cir. 1990). See also In re Huang, 40 USPQ2d 1685, 1688 (Fed. Cir. 1996)(claimed ranges or a result effective variable, which do not overlap the prior art ranges, are unpatentable unless they produce a new and unexpected result which is different in kind and not merely in degree from the results of the prior art). See also In re Boesch, 205 USPQ 215 (CCPA) (discovery of optimum value of result effective variable in known process is ordinarily within skill or art) and In re Aller, 105 USPQ 233

(CCPA 1995) (selection of optimum ranges within prior art general conditions is obvious).

Note that the specification contains no disclosure of either the critical nature of the claimed [dimensions] or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen [dimensions] or upon another variable recited in a claim, the Applicant must show that the chosen [dimensions] are critical. *In re Woodruf*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).



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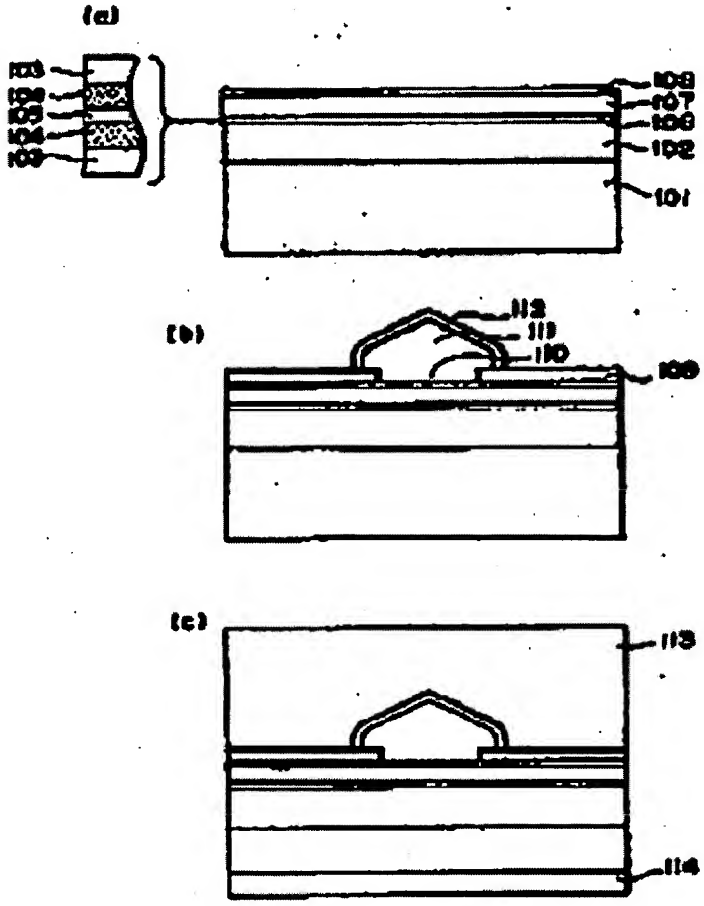

Regarding claim 17, Shimoyama shown in Figures 1 – 3, discloses the width of the bottom portion of the ridge in the first region is in a range of 1.8 μm to 2.5 μm, the width of the bottom portion of the ridge in the second region is in a range of 2.4 μm to 3 μm, and the resonator length is in a range of 800 μm to 1500 μm (see Paragraphs 0027-0029).

Regarding claim 18, Shimoyama shown in Figures 1 – 3, discloses the length of

the first region is 10% to 20% with respect to the resonator length (see Paragraphs 0058-0059).

Regarding claim 19, Shimoyama shown in Figures 1 – 3, discloses the length of the first region is 100 μm or more, and the resonator length is in a range of 800 μm to 1200 μm (see Paragraphs 0027-0029).

Regarding claim 20, Shimoyama shown in Figures 1 – 3, discloses differential resistance R_s in current voltage characteristics is 6.5 Ω or less (Paragraph 60).

Regarding claim 21, Shimoyama shown in Figures 1 – 3, discloses the width of the bottom portion of the ridge in the first region is in a range of 1.8 μm to 2.5 μm, a difference between the width of the bottom portion of the ridge in the first region and maximum value of the width of the bottom portion of the ridge in the second region is 0.5 μm or less, and the resonator length is in a range of 800 μm to 1500 μm (Paragraphs 0027-0029 and 0033).

Regarding claim 22, Shimoyama shown in Figures 1 – 3, discloses the second region is placed between the first region and one end face in the optical path and between the first region and the other end face in the optical path (see Figure 3A).

Regarding claim 23, Shimoyama shown in Figures 1 – 3, discloses at a boundary between the first region and the second region, the width of the bottom portion of the ridge in the first region is substantially the same as that in the second region (see Figure 3A and 3B).

Claims 24 – 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimoyama Kenji (JP 2000-312052) in view of Doi et al. (5,679,947).

Regarding claims 24 – 28, Shimoyama Kenji discloses the claimed invention except for reflection mirror. However, it is well known in the art to apply the reflection mirror as discloses by Doi in Figure 1. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was to apply the well known reflection mirror as suggested by Doi to the semiconductor laser of Shimoyama Kenji, because could be using to reflecting a laser bean.

Response to Amendment

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Response to Arguments

Applicant's arguments filed December 19, 2007 have been fully considered but they are not persuasive. Applicant argues the prior art lacks: "Shimoyama et al. fail to disclose a second region where the width of a bottom portion of a ridge is varied continuously in an optical path direction and the second region being placed between a first region and an end face in an optical path. Nor do Shimoyama et al. disclose a length of the first region being 10% to 50% with respect to a resonator length. The examiner disagree with the applicant arguments since the prior art does teach Shimoyama disclose a second region (See Fig. 3a, Characters Wt) where the width of the bottom portion of the ridge is varied continuously, and the second region (see Fig. 3a, Characters Wt) is placed between the first region (see Fig. 3a, Character W_C) and an end face (see Fig. 3a, Character W_R) in an optical path, and end face in an optical path and a length of the first region being 10% to 50% with respect to a resonator length. It would have been obvious to one having ordinary skill in the art at the time the invention was made to resonator length, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller,* 105 USPQ 233.

In addition, the selection of a region with respect to a resonator length, it's obvious because it is a matter of determining optimum process conditions by routine experimentation with a limited number of species of result effective variables. These

claims are prima facie obvious without showing that the claimed ranges achieve unexpected results relative to the prior art range. In re Woodruff, 16 USPQ2d 1935, 1937 (Fed. Cir. 1990). See also In re Huang, 40 USPQ2d 1685, 1688 (Fed. Cir. 1996)(claimed ranges or a result effective variable, which do not overlap the prior art ranges, are unpatentable unless they produce a new and unexpected result which is different in kind and not merely in degree from the results of the prior art). See also In re Boesch, 205 USPQ 215 (CCPA) (discovery of optimum value of result effective variable in known process is ordinarily within skill or art) and In re Aller, 105 USPQ 233 (CCPA 1995) (selection of optimum ranges within prior art general conditions is obvious).

Note that the specification contains no disclosure of either the critical nature of the claimed [dimensions] or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen [dimensions] or upon another variable recited in a claim, the Applicant must show that the chosen [dimensions] are critical. *In re Woodruf*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Delma R. Flores Ruiz whose telephone number is (571) 272-1940. The examiner can normally be reached on M - F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Min Sun Harvey can be reached on (571) -272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Delma R. Flores Ruiz
Examiner
Art Unit 2828
DRFR/MH

Min Sun Harvey
Supervisor Patent Examiner
Art Unit 2828
January 17, 2008